



PATENT

AF/374  
Iw

## IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: SHYU JIN-CHERNG, LIN CHE-WEI, YEH LAN-KAI, TSAI MING-JYE,  
CHEN SHAO-WEN, and CHUNG CHENG-TAI

|            |  |                     |             |
|------------|--|---------------------|-------------|
| Serial No: | 10753029   | Attorney Docket No: | OR0327IT    |
| Filed:     | 01/03/04   | Group Art Unit:     | 3743        |
| For:       | FLAT HEAT PIPE PROVIDED WITH MEANS<br>TO ENHANCE HEAT TRANSFER THEREOF | Examiner:           | MCKINNON, T |

**AMENDMENT RESPONSIVE TO OFFICE ACTION**  
**MAILED 11/17/04**

**MAIL STOP AF**

Honorable Commissioner for Patents

P.O. Box 1450

Alexandria, VA 22313-1450

**022192**

PATENT AND TRADEMARK OFFICE

Sir:

Please correct the heading of the Response to Office Action faxed 01/17/05, so that it reads as above, i.e., the mailing date of the Office Action should now read 11/17/04, instead of the previously incorrectly stated 06/02/04.

Respectively Submitted,

01/18/05

Date

PTO Customer No. 022192

W. Wayne Liauh, Reg. No. 34,212  
Law Office of Liauh and Associates  
4224 Waialae Ave., Suite 5-388  
Honolulu, HI 96816  
Telephone: (775) 363-2886  
Telecopier: (775) 599-0768

**CERTIFICATE OF MAILING (37 CFR §1.8a)**

I hereby certify that this paper (along with any documents referred as being attached or enclosed) is being deposited with the United States Postal Service on the date shown below with sufficient postage as first class mail in an envelop addressed to: Commissioner for Patents, P. O. Box 1450, Alexandria, VA 22313-1450

Date

01/18/05

W. Wayne Liauh  
(Type or print name of person mailing paper)  
(Signature of person mailing paper)



PATENT

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Application of: SHYU JIN-CHERNG, LIN CHE-WEI, YEH LAN-KAI, TSAI MING-JYE,  
CHEN SHAO-WEN, and CHUNG CHENG-TAI

|            |  |                     |             |
|------------|--|---------------------|-------------|
| Serial No: | 10753029   | Attorney Docket No: | OR0327IT    |
| Filed:     | 01/03/04   | Group Art Unit:     | 3743        |
| For:       | FLAT HEAT PIPE PROVIDED WITH MEANS<br>TO ENHANCE HEAT TRANSFER THEREOF | Examiner:           | MCKINNON, T |

**AMENDMENT RESPONSIVE TO OFFICE ACTION**  
**MAILED 11/17/04**

**MAIL STOP AF**

Honorable Commissioner for Patents  
P.O. Box 1450  
Alexandria, VA 22313-1450

Sir:

**REMARKS**

Applicant has made several attempts to contact the Examiner to further explain the gist invention as advanced in the response to the Final Rejection; however, it appears that the Examiner was out of the office.

Applicant believes that the flat heat pipe of the present invention is patentably distinguishable from any device taught in the prior art references cited by the Examiner. To avoid unfortunate injustice that may inadvertently result, Applicant would briefly and simply repeat the argument made in the Response previously submitted, in that the type of flat heat pipes disclosed and recited in the present invention mainly utilize the vaporization-condensation cycle to achieve heat transfer from the heat source, which is in contact with the lower wall, to the heat sink, which is in contact with the upper wall. To maintain condensation at the upper wall, the temperature of the upper wall must be kept low. All the prior art heat pipes which contain a pillar-type structure are all constructed such that the "pillars" must be made of non-heat-conducting material, so that heat will not be transferred

from the bottom wall.

In the novel design of the present invention, in contrast, the heat conducting pillars are formed *only* in the central section of the heat pipe. In other words, only the central section of the upper wall will directly receive heat from the bottom wall through conduction. The side sections, because of the lack of heat conducting pillars, will not receive heat directly from the bottom wall, thus the side sections of the heat pipe of the present invention can maintain relatively cool to allow condensates to be formed and collected. As a result, the present invention can utilize heat conducting pillars in the heat pipe; whereas, all the prior art devices utilize non-heat-conducting pillars whose only purpose is to provide structural support.

In light of the foregoing, it is believed that the present invention is in condition for allowance. And Applicant respectfully requests that a timely Notice of Allowance be issued in this case. If the Examiner has any question, he or she is invited to call or fax Applicant's counsel at the telephone numbers below.

Respectfully Submitted,

1/18/05

Date

**PTO Customer No. 022192**



W. Wayne Liauh, Reg. No. 34,212  
Law Office of Liauh and Associates  
4224 Waialae Ave., Suite 5-388  
Honolulu, HI 96816  
Telephone: (775) 363-2886  
Telecopier: (775) 599-0768